

## ABSTRACT

A Radio Frequency RF transmitter includes a translational loop architecture that supports non-constant envelope modulation types and includes by adjusting the envelope of the translational loop at the translational loop output. The RF transmitter includes an Intermediate Frequency (IF) modulator, a translational loop, an envelope time delay adjust block, an envelope adjust block, and a time delay calibration block. The IF modulator receives a modulated baseband signal and produces a modulated IF signal having a non-constant envelope. The translational loop receives the modulated IF signal and produces a modulated RF signal having a constant envelope. The envelope time delay adjust block receives an envelope signal corresponding to the original modulated signal and produces a time delayed envelope signal based upon a time delay control signal. The envelope adjust block adjusts the modulated RF signal based upon the time delayed envelope signal to produce an envelope adjusted modulated RF signal. Finally, the time delay calibration block receives the envelope adjusted modulated RF signal and produces the time delay control signal.